

News from



The GLORIOUS SOCIETY OF THE WORMHOLE

July 2019

Hello Worms

Hopefully all the worms survived Field Day. I barely did, the heat and hard work were hard on the body. I need to learn that I can't do the same stuff I did 50 years ago. I help setup and tear down TARC and also help setup some at the Hillsborough County EOC where ARES/RACES participated. I have not heard how ARES/RACES did but TARC did not do as well as last year. The bands were dead a lot of the time. After working everyone with-in several hundred miles the contacts started getting hard to find. That is one advantage of those states in the Midwest, they don't have water on three sides. I suspect many clubs had the same issues.

Talk-in is on the Wormhole repeater system. For those coming to the meeting who cannot hit the repeater we will also monitor the Honeywell club repeater on 443.050 +141.3.

BRING A FOLDING CHAIR FOR THE MEETING IF YOU HAVE ONE. Every meeting someone says they forgot their chair, see if you can avoid being the one this month ;-)

*** THREE AMATEUR RADIO SATELLITES LAUNCHED ***

From ARRL Headquarters
June 26, 2019

LightSail 2 Launches, Will Transmit CW Beacon

The Planetary Society's LightSail 2 CubeSat, launched on June 25, will transmit Morse code from space. LightSail is a citizen-funded project to send a small spacecraft, propelled solely by sunlight, into Earth's orbit. The innovative satellite is due to be deployed on July 2 from Prox-1, a Georgia Tech student-built spacecraft the size of a small washing machine. Once deployed, LightSail 2 will automatically transmit a beacon packet every few seconds, which can be decoded into 238 lines of text telemetry describing the spacecraft's health and status, including everything from battery status to solar sail deployment motor state. Every 45 seconds, the spacecraft will transmit "LS2" on the spacecraft's frequency of 437.025 MHz, within the Amateur Radio 70-centimeter band.

Further details can be found online at,

<http://www.planetary.org/explore/projects/lightsail-solar-sailing/> .

LightSail 2 lifted off from Kennedy Space Center, Florida, carried by the SpaceX triple-booster Falcon Heavy rocket. The launcher also carried aloft two dozen spacecraft for the US Air Force STP-2 mission. Launch had been set to occur late on June 24, but SpaceX delayed the liftoff to make additional ground system checks.

"During its ride to orbit, LightSail 2 was tucked safely inside its Prox-1 carrier spacecraft," The Planetary Society said post-launch. "The Falcon Heavy upper stage's payload stack released Prox-1 about an hour and 20 minutes after liftoff, at an altitude of roughly 720 kilometers (446 miles). Prox-1 will house LightSail 2 for one week, allowing time for other vehicles released into the same orbit to drift apart so each can be identified individually."

Bruce Betts, Planetary Society chief scientist and LightSail 2 program manager, said, "After years of hard work, we are ecstatic with the launch and looking forward to doing some solar sailing." Some 500 Planetary Society members and supporters were on hand at the Kennedy Space Center Apollo-Saturn V Center to watch their crowdfunded spacecraft take flight.

LightSail 2 team members will soon converge at Cal Poly San Luis Obispo in California, where the spacecraft's mission control is located. Once LightSail 2 is released from Prox-1, the team will spend several days checking out its systems before commanding its dual-sided solar panels to deploy. Following that, the spacecraft's solar sails will be deployed in approximately 2 weeks.

Two US Naval Academy student-built satellites carrying Amateur Radio payloads were on the launch. BRICSat-2 (call sign USNAP1) will function as a 1.2/9.6 k APRS digipeater on 145.825 MHz. Telemetry will be transmitted on 437.975 MHz. PSAT-2 also will operate on 145.825 MHz with APRS to voice and DTMF to voice/APRS, and it will carry a 28.120 MHz up/435.350 MHz down PSK31 transponder. An SSTV camera will transmit on the same downlink. — *Thanks to The Planetary Society, Bob Bruninga, WB4APR, and AMSAT News Service*

*** FIREFOX TO OFFER PREMIUM SUBSCRIPTION SERVICE ***

techradar. By Catherine Ellis February 05, 2019

The free version will remain unchanged

Mozilla Firefox is already one of the best web browsers in the business, but Mozilla CEO Chris Beard has hinted that a premium-level Firefox experience will soon be available for those who want a little extra.

Premium add-ons could include some form of cloud storage as well as integrated VPN features, Beard told T3N. A launch has been scheduled for October.

Beard did emphasize that everything that exists in Firefox as it stands now – including tight tracking protection controls – will remain free. The premium option is going to be for those who want even more goodies in their browser.

That's been reiterated with a statement from Dave Camp, Senior Vice President of Firefox. "A high-performing, free and private-by-default Firefox browser will continue to be central to our core service offerings," he said.

"We also recognize that there are consumers who want access to premium offerings, and we can serve those users too without compromising the development and reach of the existing products and services that Firefox users know and love."

Right now Mozilla makes money from Firefox through partnerships with the likes of Google (for searching) and Pocket (for bookmarking), but company bosses are obviously keen to add a third stream of income for the future.

With Chrome, Safari and Edge all offering improvements on a regular basis, Mozilla knows it's got its work cut out to keep Firefox as one of the best browsers on the market.

And to be fair to Firefox it's not standing still – this year we've seen improved privacy controls and optimized loading times roll out. The huge collection of extensions and add-ons is another reason to pick Firefox as your daily browser.

Just last week the standalone Firefox Lockwise desktop password manager was rolled out, giving users an even easier way to keep on top of their website logins.

For the time being it's not clear exactly what a premium Firefox tier would include, or how much it would cost – Mozilla itself probably isn't sure at this stage – but it's something to watch out for later in the year.

IN RELATED NEWS ABOUT MOZILLA AND FIREFOX FROM THE SAME SOURCE ON THE SAME DAY:

After a limited rollout in December with Firefox 64, Mozilla is expanding a new feature that suggests browser extensions based on your online activity.

Contextual Feature Recommender (CFR) uses your browsing history to suggest plugins that you might like, and like the sponsored stories that may appear when you open a new tab, this all happens on your PC; no data is sent to Mozilla or any third parties.

Unlike sponsored stories, however, Mozilla isn't being paid to recommend extensions using CFR. The tool initially suggested just three plugins for your consideration, but the collection will soon begin to grow.

"Each of the extensions selected in the current test are popular with a large user base and are also highly rated based on user reviews on addons.mozilla.org," a Mozilla spokesperson told TechRadar. "Some have also been featured by our add-on editorial team."

Opinion is divided among Firefox fans on Reddit. " I shouldn't need to see advertisements for Firefox's features if I'm already using Firefox," said user Aperson3334. "Besides, what modern browser *doesn't* have extensions/add-ons? All that's really left is IE, and that's no longer in development."

"They aren't ads," responded darklight001. "And 90% of users don't know about addons. Turn it off if it bothers you."

If you're among those who find the recommendations distracting, you can disable them by selecting Options > General > Browsing and unchecking 'Recommend extensions as you browse'.

"We want to help users get what they need from the web faster, and the results for the current three extensions have been positive," said Mozilla's spokesperson. "You'll see us continue testing and expanding incrementally, leveraging learnings and user feedback."

*** GETTING LOADED (ANTENNA WISE) ***

Diodes are mainly a two material component, a P (+) and N (-) material. Mainly to allow current to flow in one direction, but not in the reverse. However, you can do other things with diodes.

Depending on how it is constructed and doped will offer a component that can be used as a variable capacitor, oscillators, frequency regulators and frequency multipliers.

The Varactor diode is one of these components that can be used as a variable capacitor. It is also good for high frequencies in the VHF and UHF spectrum.

Even though a varactor diode has a reverse and forward current, it is not used that way. It is used with a voltage applied in reversed polarity. Therefore not much current will flow through the diode.

The P and N junction are set up to have a capacitance value. When the voltage is connected in the reverse bias, this capacitance value will change. Some diodes can have a capacitance value at 100 pf. Others can go as low as 4 pf.

A diode that is not reversed bias (nor forward) will develop the maximum capacitance value or lowest reactance. As you bring up the reversed voltage the capacitance value decreases, reactance increases.

For example, a diode with .6 volts reversed bias may have a capacitance value of 85 pf (pico-farads). At 6 volts it can drop to 40 pf. At 60 volts it can go down to 15 pf. This is the minimum and maximum range of this diode. Others will have different values. The best place to bias the diodes is near the middle of its curve. Therefore you want to pick the diode that fits your needs.

Using a well regulated power source will offer a very good stability. This will allow oscillators (vfo's) or frequency multipliers to be very stable.

Most diodes will develop a variable capacitance with a reverse bias, but the varactor diodes are specifically designed for this purpose and can be used at higher frequencies.

The breakthrough of using diodes in this way years ago, has opened up the higher spectrum for use. Even up into the GHz region.

It is a simple device that can do much in the electronic field.

73,
Ralph WD0EJA
www.isotronantennas.com

*** THOUSANDS OF GOOGLE PLAY APPS ARE DATA-STEALING COUNTERFEIT***

TNW by Ravie lakshmanan 6-24-2019

The two year study, conducted by researchers from the University of Sydney and Commonwealth Scientific and Industrial Research Organisation's (CSIRO) Data61, analyzed more than a million Android apps on the platform. They found an alarming number that impersonated legitimate apps and games.

“We were able to find 2,040 potential counterfeits that contain malware in a set of 49,608 apps that showed high similarity to one of the top-10,000 popular apps in Google Play Store,” the study noted. “We also [found] 1,565 potential counterfeits asking for at least five additional dangerous permissions than the original app and 1,407 potential counterfeits having at least five extra third-party advertisement libraries.”

Games Temple Run, Free Flow, and Hill Climb Racing were among the most commonly counterfeited.

To carry out the study, researchers designed a convolutional neural net to identify similarity in app icons, thereby proving that unsuspecting users can be fooled into downloading a fake app that has a similar image style and iconography.

After discovering a million apps by crawling the Play Store, they downloaded the APK files and grouped them by app category and visual similarity shared by the apps. They also took into account plagiarised text descriptions of the top 10,000 most popular apps in the Play Store. The ‘multi-modal embedding’ machine learning model found 49,608 potential counterfeits.

The identified apps were then checked for malware using the private API of VirusTotal, an online malware analysis tool that was acquired by Google in 2012. The company has since been spun-off into a full-fledged cybersecurity sister company under Alphabet called Chronicle in 2018.

The paper also took into account the permissions requested by these apps and third-party ad libraries that come with them, but noted that around 35 percent of the apps are no longer available in the Play Store “potentially removed due to customer complaints.”

Google, for its part, has been leveraging Google Play Protect as a means to secure Android devices from potentially harmful applications.

It has also tightened its polices and as a result, the number of rejected app submissions increased by more than 55 percent, and app suspensions increased by more than 66 percent, the company noted.

“Keeping the Android ecosystem secure is no easy task, but we firmly believe that Google Play Protect is an important security layer that’s used to protect users devices and their data while maintaining the freedom, diversity and openness that makes Android, well, Android,” Google acknowledged earlier this year.

But problematic apps have continued to bypass the security barrier several times before.

Back in April, the internet giant sprung into action after a series of BuzzFeed investigations found popular Android apps with millions of downloads were found to be running hidden video ads and engaging in ad fraud.

Complicating the matter is the open nature of Android, which makes it relatively easy for copycat apps to escape detection, thus leaving users at risk.

The fact that the research was conducted on what should be one of the most legitimate app stores is a cause for concern. If you are an Android device owner, make sure you verify it is indeed the app you’re looking for by checking out reviews. Most importantly, always check the permissions on the app’s page and confirm they’re not asking for far more than they need to function.

*** HOW SWR COMPARES TO ACTUAL LOSS***

By Ralph www.isotronantennas.com

Many station operators have a high concern with SWR (Standing Wave Ratio). Therefore, how much loss is there with SWR's over 1:1?

Many SWR meters give the loss on the meter front. It gives a percentage of reflected power. It can state, a 3:1 SWR has a reflected power of 25%. That sounds like a lot of loss, but what is the loss in db where it counts?

To determine the actual loss in db it is necessary to figure it at the frequency you are using. The lower the frequency the less loss you will have for the same SWR at a higher frequency.

Most feedlines match the transmitters well at 50 ohms. Terminating the end of the feedline with a resistive load results in the least loss you can have. This could be a dummy load or a perfectly matched antenna system that will measure a 1:1 SWR.

However, if the mismatch is higher than a 1:1 because you are off the center frequency of the antenna, you are introducing a reactive load. This is where the capacitive reactance (X_c) is not equal to the inductive reactance (X_L). So, how bad is it?

The math is not real complicated, but is a little involved. Therefore, I am going to skip it and give some figures just to give an idea of the losses.

One of the major determining factors is the loss of your feedline per length. Most manufactures will give the loss in db per frequency at 100 feet. db loss will increase with frequency.

To give an example. The loss of RG/213 coax at 14.2 MHz is rated at .795 db of matched line per 100 feet. Therefore, 150 feet of coax would have a loss of 1.193 db.

Let us say we have a mismatch of a 4:1 SWR. On your SWR meter it looks bad. However what is the actual loss on 14.2 MHz in db with 150 feet of coax?

Doing the calculations that you can find in most hand books calculates to be a loss of .93 db. Your ear needs 1 db to detect a change in volume. Your radio on average requires 6 db per 1 "S" unit.

This loss at a 4:1 SWR would barely be noticeable. If your are using the lower frequencies the loss at 4:1 SWR becomes even less. Of course, the higher the frequency the more db loss you will have.

Up to 30 MHz the losses are not severe. However you can image how the db loss will soar at vhf and uhf frequencies. When operating the higher frequencies it is important to maintain a low SWR between the antenna and feedline.

On the HF frequencies, you can see that SWR is not near as critical. That is one of the reasons a simple matching device at the radio will work well to protect the transmitter and give negligent loss due to a relatively high SWR.

73,

Ralph WD0EJA

wd0eja@isotronantennas.com



CLUB MEETING

The next club meeting is July 6th. We meet on the first Saturday every month at 11:00 Saturday morning at the Minnreg Building located at 6340 126th Ave N, Largo. Members are welcome to come in the rear area through the fence gate on the southeast corner of the property. Talk-in is on the Wormhole repeater system. For those coming to the meeting who cannot hit our repeater we will be monitoring the Honeywell club repeater on 443.050 +141.3. We will keep an eye peeled for you. We will take advantage of the cooking facilities with an after-the-meeting Social and Wormdog picnic.



CLUB NETS

Check in on the club net Thursdays at 1930 and 2000 (or at the end of the 2M net). 2M at 146.850 – with a tone of 146.2. Our 6M net runs after our regular 2M net on 53.150 – 1MHz offset 146.2 tone. We are always looking for volunteers to be the net control operator. Anyone interested, talk to one your club officers.



LOCAL NETS

MONDAY

1730 147.030 + Receiver sites and tone info <http://www.qsl.net/wd4scd/> St Pete
Yacht Club ARC

1830 147.060+ no tone St Pete ARC daily net St
Petersburg

1900 144.210 USB CARS, vertical polarization
Clearwater

1900 147.135 +146.2 Zephyrhills ARC
Zephyrhills

2000 147.165+ 136.5 Brandon ARS from
Brandon

2000 50.135 Pinellas ARK Pinellas
County

2030 NI4CE system EAGLE Net, NTS traffic net, NI4CE system

2030 145.450 Pinellas ARK Pinellas
County

TUESDAY

1830 147.060 no tone St Pete ARC daily net from St
Petersburg

1900 50.200 USB 6M net Brandon
ARS

1900 28.450 WCF section net
Clearwater

1900 NI4CE system WCF Section VHF ARES NI4CE
system

1930 145.170 & 442.4 both pl 156.7	Pinellas ACS net	Clearwater
1930 444.900 +141.3	Sheriff's Tactical ARC	Tampa
2000 NI4CE system	WCF Skywarn net	NI4CE system
2000 147.105+ 146.2 Tampa	Tampa ARC net	from
2000 28.365 USB	simplex	Brandon ARS
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 28.465 USB	10/10 net	from Orlando
1900 146.490 simplex simplex Net	3 RD Tuesday monthly, Hillsborough Co ARES	

WEDNESDAY

1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1930 52.020 simplex Petersburg	Suncoast 6'ers	from St
1930 NI4CE system system	WCF Section Digital Info Ne	NI4CE
2000 147.105 146.2 Tampa	Greater Tampa CERT net	from
2000 146.97- 146.2 Clearwater	Clearwater ARS	from
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 NI4CE system affiliated	Tampa Bay Traders Net	non-

THURSDAY

1800 146.52 simplex Tampa	Hillsborough ARES/RACES	North
1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1900 444.750 +146.2 Tampa	Fusion net	from
1915 224.660- no tone Petersburg	St Pete ARC	from St
1930 146.6385 -127.3 Lakeland	Lakeland ARC	from
1930 440.100 + 162.2 Tampa	Hillsborough ARES/RACES	from
1930 146.850- 146.2 Petersburg	Wormhole	from St
2000 53.150 -1MHz 146.2 Petersburg	Wormhole	from St
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
FRIDAY		
1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
SATURDAY		
0730 3.940 (7.281 Alt.)+/- QRM WCF	WCF Section HF Net	from
1830 147.060 no tone Petersburg	St Pete ARC daily net	from St

2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
SUNDAY		
0800 3.933	Florida Traders Net	non-affiliated
1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1930 NI4CE system system	WCF Section Net	NI4CE
2000 147.550 simplex County	550 Simplex Net	Pinellas
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 144.210 USB orientation	Clearwater ARS	vertical



FOR SALE / WANTED

Anyone having something for sale or who might be looking for an item let me know. I will not print phone numbers or email addresses unless specifically told to since this newsletter might end up on the web. The exception is when I get the information off the web. If you are a member of the Wormhole then you have all the information you need on a club roster and if you are not a member .. why not? OK, if you are not a member you can contact me at the email address at the end of this newsletter, I will give you the information to contact the person involved.

FOR SALE, Mosley TA-33M 10-15-20M beam with the 40M add on kit. Antenna is on the ground and in good shape. There are several parts that need replacement. The 40M kit is new in box. Antenna is broken down into six or seven feet sections so easy to handle. Asking \$300, talk to me, Bill AG4QX at arrl dot net or see me at the meeting.

FOR SALE, Cushcraft A4S 10-15-20M beam, on the ground. There are several parts that need replacement. Asking \$250, talk to me, Bill AG4QX at arrl dot net or see me at the meeting.

HAMFESTS

2019

- August 17** **TARCFest**, TARC Clubhouse, 22nd St at the river, \$5 entry plus including tailgate, a few inside tables reserved in advance, talkin on 147.105 +146.2, more info at <http://hamclub.org/>
- October 26** **Gulf Coast ARC Hamfest**, New Port Richey, Millennium Academy, 10005 Ridge Road, admission \$6, tailgate free, Talk-In on 146.670 - no tone, For info contact Ralph McCullough , WA3YFQ 727-247-4790, no information on their website
- November 9** Pinellas Park, **SPARCFest**, admission FREE, tailgate free, Freedom Lake Park, 9990 46th St N, Southeast corner of US 19 and 49th Street, Talk-in on 147.060+ no tone. VE testing at 0900. For more information go to <http://www.sparc-club.org/sparcfest.html>
- December 13 & 14** **Plant City, the 2018 Tampa Bay Hamfest is the West Central Florida Section Convention**, Friday and Saturday, at the Expo Building in the Strawberry Festival grounds, advanced admission \$9, at the door \$10, for information contact **Bill Williams AG4QX**, chairman@fgcarc.org or go to <http://www.tampabayhamfest.org> or you can just ask me, Jim or Dee at a meeting ;-)

2020

- February 7-9** **Orlando Hamcation and State Convention**, Central Florida Fairgrounds, 4603 West Colonial Drive, Tickets \$15 in advance, \$17 at door. Talkin 146.4760 - no PL or D-Star 146.850 -, all the information at www.hamcation.com or call 407-841-0874

February 21 & 22 Tampa, **5th Annual TECHCON Convention**, for more info
<http://arllwcf.org/> or contact Darrell Davis at kt4wx@arri.net.

May 23 **WormFest 2020**, Pinellas Park, admission FREE, tailgate free,
Freedom Lake Park, 9990 46th St N, southeast corner of US 19
and 49th Street, 33782. Park opens at sunrise for vendor setup,
hamfest starts at 0800. Talk-in on 442.625 + or 146.850 – both
with a tone of 146.2. For a map and directions see
<http://www.TheWormholeSociety.org> .

Mid January	Frogman swim in Tampa Bay. http://www.tampabayfrogman.com/
Last full weekend January	Winter Field Day, https://www.winterfieldday.com/
Late January	Gasparilla celebration
Late February	West Central Florida Tech Conference http://arllwcf.org/wcf-special-events/wcfttechconference/
March/April	MS Walks
March/April	Mass Casualty Exercises
Late April	Southeastern VHF Society Conference, http://www.svhfs.org
Late April	Florida QSO Party
Mid May	March For Babies (was March of Dimes) https://www.marchforbabies.org/Registration/Events
Early to Mid May	MS 150 Citrus Tour bike ride http://www.citrustour.org/register.php
Mid-May	Annual Armed Forces Crossband Test
Mid-May	Florida Hurricane Exercise
May, Memorial Day Weekend	Wormfest
Early June	Museum Ships on the Air
Fourth weekend in June	Field Day http://www.arri.org/contests/announcements/fd/

July 3/4	Midnight Run in Largo http://www.kiwanismidnightrun.com/
August	International Lighthouse/Lightship Week https://illw.net/
October, 3 rd weekend	JOTA, Scout Jamboree-on-the-AIR (around 14.280MHz)
Early December	ALS bike ride in Walsingham Park
December, Second weekend	Tampa Bay Hamfest http://www.fgcarc.org/

YOUR WORMHOLE OFFICERS

Bill AG4QX is President and editor of this newsletter, Treasurer is Jim KD4MZL, Paul KA4IOX is the Secretary, Dee N4GD is the Repeater Trustee and Mike K4ZPE is both our club Vice President and webmaster.

YOUR WORMHOLE REPEATERS

53.150 -1Mz PL 146.2

442.625 +5Mz PL 146.2

146.850 - 600Kz PL 146.2

The Wormhole repeaters are both now dual mode Yaesu DR-1X. FM analog as always and now Yaesu Fusion, a C4FM/FM digital mode.

The Wormhole website is at: <http://www.TheWormholeSociety.org>.

West Central Florida Section website: <http://www.arrlwcf.org/>.

The ARRL website is at: <http://www.arrl.org/>

This newsletter is written for The Glorious Society of the Wormhole, an ARRL affiliated amateur radio club located around the Seminole section of Pinellas County Florida. Anyone wishing to be added or removed from The Glorious Society of the Wormhole mailings please write to me at the address below and thy will be done.

73,

Bill Williams

AG4QX

ag4qx AT arrl DOT net